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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,494	12/03/2003	Chandra Mouli	M4065.0917/P917	3984
24998	7590	05/25/2005	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			LEE, PATRICK J	
2101 L Street, NW			ART UNIT	
Washington, DC 20037			PAPER NUMBER	
			2878	

DATE MAILED: 05/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/725,494	Applicant(s) MOULI, CHANDRA	
	Examiner Patrick J. Lee	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-81 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-81 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because drawings are handwritten. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.
2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Label "10" is not described in the specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with

Art Unit: 2878

37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 5, 8, 20, 64-66, & 69 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 62278432 A to Hoshi.

With respect to claim 1, Hoshi discloses a device in which photodetector (4) is located within a substrate plate, with a copper mesh filter (2) located over the photodetector.

With respect to claim 2, filter (2) has a range of wavelengths that it allows light to pass.

With respect to claims 5, 8, & 20, filter (2) is made of a copper mesh deposited.

With respect to claim 64, Hoshi discloses a device in which photodetector (4) is located within a substrate plate, with a copper mesh filter (2) located over the photodetector.

With respect to claim 65, filter (2) has a range of wavelengths that it allows light to pass.

With respect to claims 66, & 69, filter (2) is made of a copper mesh deposited.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 3-4, 6-7, 9-19, 21-63, 67-68, & 70-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 62278432 A to Hoshi.

With respect to claim 3-4, Hoshi does not explicitly refer to the photodetector being utilized in a CMOS or CCD image sensor, but such would have been obvious to one of ordinary skill in the art because both are low cost imaging detectors that are easy to manufacture.

With respect to claims 7-8, the thickness of the metal layers are not explicitly disclosed but such would have been a mere matter of obvious design choice in order to ensure that the filter is capable of filtering out appropriate wavelengths of light.

With respect to claims 9-11, the shape of the apertures is not specifically disclosed, but such would have been a mere matter of design choice as such would allow for certain amounts of light to be incident on the detector.

With respect to claim 12, the modified Hoshi does not explicitly disclose the apertures passing visible light, but such would be obvious to one of ordinary skill in the art as it would allow for applicability of the device to image visible light.

With respect to claims 13-16, the size of the apertures is not explicitly disclosed, but such would be obvious to one of ordinary skill in the art in order to control the amount of light that the filter passes through.

With respect to claim 17, Hoshi does not explicitly disclose the apertures passing non-visible light, but such would be obvious to one of ordinary skill in the art as it would allow for applicability of the device to image non-visible light.

With respect to claim 18, the modified Hoshi does not explicitly disclose the apertures passing infrared light, but such would be obvious to one of ordinary skill in the art as it would allow for applicability of the device to image infrared light.

With respect to claim 19, the modified Hoshi does not explicitly disclose the apertures passing near-infrared light, but such would be obvious to one of ordinary skill in the art as it would allow for applicability of the device to image near-infrared light.

With respect to claim 21-22, the modified Hoshi does not explicitly disclose the use of an additional mesh filter positioned over the first filter, but such would be obvious to one of ordinary skill in the art to increase the filtering capability and sensitivity of the device.

With respect to claim 23, the modified Hoshi does not explicitly disclose a corresponding layer deposited and patterned to interconnect image sensor circuitry but such would have been obvious to one of ordinary skill in the art in order to give the filters ability to be controlled electrically.

With respect to claim 24, the thickness of the metal layers are not explicitly disclosed but such would have been a mere matter of obvious design choice in order to ensure that the filter is capable of filtering out appropriate wavelengths of light.

With respect to claim 25, the modified Hoshi disclose the filter to be made of copper.

With respect to claim 26, the modified Hoshi does not explicitly disclose the array of pixels and plurality of mesh filters, but such would have been obvious to one of ordinary skill in the art as a mere matter of obvious duplication of parts to allow the device to image a larger area and with greater sensitivity.

With respect to claims 27-28, the modified Hoshi does not explicitly disclose the filters passing red, green, and blue or cyan, magenta, and yellow light, but such would have been obvious to one of ordinary skill in the art to cover the appropriate visible light spectrum.

With respect to claim 29, the use of a Bayer pattern is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art in order to randomize the location of the different color filters.

With respect to claim 30, the modified Hoshi disclose the filter to be made of copper.

With respect to claim 31, the modified Hoshi does not explicitly disclose a corresponding layer deposited and patterned to interconnect image sensor circuitry but such would have been obvious to one of ordinary skill in the art in order to give the filters ability to be controlled electrically.

With respect to claims 32-33, the thickness of the metal layers are not explicitly disclosed but such would have been a mere matter of obvious design choice in order to ensure that the filter is capable of filtering out appropriate wavelengths of light.

With respect to claim 34, the modified Hoshi disclose the metal filter being formed from a metal layer deposited.

With respect to claim 35-36, the modified Hoshi does not explicitly refer to the photodetector being utilized in a CMOS or CCD image sensor, but such would have been obvious to one of ordinary skill in the art because both are low cost imaging detectors that are easy to manufacture.

With respect to claim 37, the modified Hoshi discloses a mesh filter that inherently comprises apertures that pass light of a specific wavelength.

With respect to claims 38-40, the shape of the apertures is not specifically disclosed, but such would have been a mere matter of design choice as such would allow for certain amounts of light to be incident on the detector.

With respect to claims 41-44, the size of the apertures is not explicitly disclosed, but such would be obvious to one of ordinary skill in the art in order to control the amount of light that the filter passes through.



With respect to claim 45, the modified Hoshi does not explicitly disclose the array of pixels and plurality of mesh filters, but such would have been obvious to one of ordinary skill in the art as a mere matter of obvious duplication of parts to allow the device to image a larger area and with greater sensitivity.

With respect to claims 46-47, the modified Hoshi does not explicitly disclose the filters passing red, green, and blue or cyan, magenta, and yellow light, but such would have been obvious to one of ordinary skill in the art to cover the appropriate visible light spectrum.

With respect to claim 48, the use of a Bayer pattern is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art in order to randomize the location of the different color filters.

With respect to claim 49, the modified Hoshi disclose the filter to be made of copper.

With respect to claim 50, the modified Hoshi does not explicitly disclose a corresponding layer deposited and patterned to interconnect image sensor circuitry but such would have been obvious to one of ordinary skill in the art in order to give the filters ability to be controlled electrically.

With respect to claims 51-52, the thickness of the metal layers are not explicitly disclosed but such would have been a mere matter of obvious design choice in order to ensure that the filter is capable of filtering out appropriate wavelengths of light.

With respect to claim 53, the modified Hoshi disclose the metal filter being formed from a metal layer deposited.

With respect to claim 54-55, the modified Hoshi does not explicitly refer to the photodetector being utilized in a CMOS or CCD image sensor, but such would have been obvious to one of ordinary skill in the art because both are low cost imaging detectors that are easy to manufacture.

With respect to claim 56, the modified Hoshi discloses a mesh filter that inherently comprises apertures that pass light of a specific wavelength.

With respect to claims 57-59, the shape of the apertures is not specifically disclosed, but such would have been a mere matter of design choice as such would allow for certain amounts of light to be incident on the detector.

With respect to claims 60-63, the size of the apertures is not explicitly disclosed, but such would be obvious to one of ordinary skill in the art in order to control the amount of light that the filter passes through.

With respect to claims 67-68, the thickness of the metal layer is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art to control the amount of light that the filter passes through.

With respect to claims 70-72, the shape of the apertures is not specifically disclosed, but such would have been a mere matter of design choice as such would allow for certain amounts of light to be incident on the detector.

With respect to claim 73, the modified Hoshi does not explicitly disclose the apertures passing visible light, but such would be obvious to one of ordinary skill in the art as it would allow for applicability of the device to image visible light.

With respect to claims 74-77, the size of the apertures is not specifically disclosed, but such would have been a mere matter of design choice as such would allow for certain amounts of light to be incident on the detector.

With respect to claim 78, the modified Hoshi does not explicitly disclose the array of pixels and plurality of mesh filters, but such would have been obvious to one of ordinary skill in the art as a mere matter of obvious duplication of parts to allow the device to image a larger area and with greater sensitivity.

With respect to claims 79-80, the modified Hoshi does not explicitly disclose the filters passing red, green, and blue or cyan, magenta, and yellow light, but such would have been obvious to one of ordinary skill in the art to cover the appropriate visible light spectrum.

With respect to claim 81, the use of a Bayer pattern is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art in order to randomize the location of the different color filters.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 4,158,133 to Spaeth et al discloses a filter for photodetectors.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick J. Lee  
Examiner  
Art Unit 2878

PJL  
May 10<sup>th</sup>, 2005

  
**Stephane B. Allen**  
**Primary Examiner**